

<b>SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS</b>				INITIALS / CONTROL NO. <b>5912G/042074</b>		1. REQUISITION NUMBER <b>N66604-4021-06N3</b>	
<b>OFFEROR MUST COMPLETE BLOCKS 12, 17, 23, 24, &amp; 30</b>							
2. CONTRACT NO.		3. AWARD/EFFECTIVE DATE		4. ORDER NUMBER		5. SOLICITATION NUMBER <b>N66604-04-R-2074</b>	
						6. SOLICITATION ISSUE DATE <b>2004 FEB 20</b>	
7. FOR SOLICITATION INFORMATION CALL:		a. NAME <b>Carol G. Boehler</b>		b. TELEPHONE NUMBER (No collect calls) <b>401-832-1489</b>		FAX NUMBER <b>401-832-4820</b>	
						8. OFFER DUE DATE / LOCAL TIME <b>2004 MAR 8 2:00 p.m.</b>	
9. ISSUED BY <b>Commercial Acquisition Department, Building 11 Naval Undersea Warfare Center Division, Newport Code 5912, Simonpietri Drive Newport, RI 02841-1708</b>				10. THIS ACQUISITION IS <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE: <b>100%</b> FOR <input checked="" type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> HUBZONE SMALL BUSINESS 8(a) <input type="checkbox"/>		11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE <input checked="" type="checkbox"/>	
						12. DISCOUNT TERMS	
						13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)	
						13b. RATING <b>DO-C9</b>	
						14. METHOD OF SOLICITATION	
15. DELIVER TO <b>Receiving Officer, Naval Station Newport 47 Chandler Street Newport, RI 02841-1716 401-841-3827 Mark For: NUWC Division, Newport -- P.O.#: N66604-</b>				16. ADMINISTERED BY <b>SEE BLOCK 9</b>		17. NAICS: <b>334511</b> SIZE STANDARD <b>750 Emp.</b> RFQ <input type="checkbox"/> IFB <input type="checkbox"/> RFP <input checked="" type="checkbox"/>	
17a. CONTRACTOR / OFFEROR  POC/TELE. NO. DUNS NUMBER:				18a. PAYMENT WILL BE MADE BY <b>Unless otherwise specified, payment will be made by government purchase card, currently the Citibank Mastercard. At the time of shipment, contact the individual identified in Section I to obtain the account number to be charged. Invoices and bankcard authorizations should be mailed to that individual at NUWC Receipt Control; Code 0221 Building 1176; Newport, RI 02841.</b>		18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK IS CHECKED <input type="checkbox"/> SEE NOTE ABOVE	
17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT ADDRESS IN OFFER <input type="checkbox"/>							
19. ITEM NO.		20. SCHEDULE OF SUPPLIES/SERVICES		21. QUANTITY		22. UNIT	
						23. UNIT PRICE	
						24. AMOUNT	
		<b>SEE PAGE 2</b>					
		<b>DELIVER ALL ITEMS BY: See Clause F11</b>					
<b>DIST: File(1), Kr (1), 0221 (1), 0221 Rec Control(1), Orig (1)</b>							
25. ACCOUNTING AND APPROPRIATION DATA						26. TOTAL AWARD AMOUNT (For Govt. Use Only) <b>R</b>	
27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.							
27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.							
28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN <b>2</b> COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY CONTINUATION SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.				29. AWARD OF CONTRACT: REFERENCE <input type="checkbox"/> OFFER DATED <input type="checkbox"/> YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: <b>ALL ITEMS</b>			
30a. SIGNATURE OF OFFEROR/CONTRACTOR				31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)			
30b. NAME AND TITLE OF SIGNER (TYPE OR PRINT)		30c. DATE SIGNED		31b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT)		31c. DATE SIGNED	
32a. QUANTITY IN COLUMN 21 HAS BEEN <input type="checkbox"/> RECEIVED <input type="checkbox"/> INSPECTED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED: _____							
32b. SIGNATURE OF AUTHORIZED GOVT. REPRESENTATIVE				32c. DATE		32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVT. REPRESENTATIVE	
32e. MAILING ADDRESS OF AUTHORIZED GOVT. REPRESENTATIVE				32f. TELEPHONE NUMBER OF AUTHORIZED GOVT. REPRESENTATIVE			
				32g. E-MAIL OF AUTHORIZED GOVT. REPRESENTATIVE			
33. SHIP. NUMBER <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		34. VOUCHER NUMBER		35. AMOUNT VERIFIED CORRECT FOR		36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	
38. S/R ACCOUNT NUMBER		39. S/R VOUCHER NUMBER		40. PAID BY		37. CHECK NUMBER	
41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT.				42a. RECEIVED BY (Print)			
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER				42b. RECEIVED AT (Location)			
				41c. DATE		42c. DATE REC'D (YY/MM/DD)	
						42d. TOTAL CONTAINERS	

AUTHORIZED FOR LOCAL REPRODUCTION

STANDARD FORM 1449 (REV. 4/2002)

Prescribed by GSA - FAR (48 CFR) 53.212

**B10 SUPPLIES/SERVICES AND PRICES - FFP**

Offerors shall complete the unit price and amount blocks. Offerors shall provide the information required by Provision L34. Offerors shall complete and return the entire solicitation.

<u>ITEM</u>	<u>SUPPLIES/SERVICES</u>	<u>QTY</u>	<u>UNIT</u>	<u>U/PRICE</u>	<u>AMOUNT</u>
0001	Test flat composite panel per Section C below, unless waived by the Government.	1	EA	\$ _____	\$ _____
0002	Fiber Reinforced Composite Radome per Section C below, unless waived by the Government.	1	EA	\$ _____	\$ _____
0003	Fiber Reinforced Composite Radome per Section C below, if line items 0001 and 0002 are not waived by the Government.	5	EA	\$ _____	\$ _____

**- OR -**

0004	Fiber Reinforced Composite Radome per Section C below, if line items 0001, 0002 and 0003 are waived by the Government.	6	EA	\$ _____	\$ _____
0005	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	NSP	NSP

**OPTION:**

0006	Fiber Reinforced Composite Radome per Section C below, if line items 0001, 0002 and 0003 are waived by the Government.	6	EA	\$ _____	\$ _____
0007	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	NSP	NSP

NSP = not separately priced.

**B42 OPTION**

The additional items of supplies or services available under the Options clause of this contract, identified by the applicable Line Item, and the exercise dates are specified below:

<u>LINE ITEM NO.</u>	<u>EXERCISE DATE</u>
0006/0007	On or before 31 December 2004

## SECTION C DESCRIPTION / SPECIFICATIONS/WORK STATEMENT

### C10 SPECIFICATIONS, AMENDMENTS OR REVISIONS APPLICABLE

SUPPLIES to be furnished under the contract shall comply with the following Descriptions or Specifications:

<u>ITEM</u>	<u>DESCRIPTION/SPECIFICATION</u>	<u>REVISION</u>	<u>DATE</u>
0001 – 0004, 0006	Statement of Work, including Specification PS-RAD-002, Appendix A/ Acceptance Test Procedures, and Drawing SK-004.	-	-

### C31 MERCURY EXCLUSION

The supplies furnished under this contract shall be free from mercury contamination (i.e., during the manufacturing process, tests or inspections), in accordance with NAVSEA INSTRUCTION 5100.3D. The supplies offered shall not have come in direct contact with mercury or any of its compounds nor with any mercury containing devices employing only a single boundary of containment. (A single boundary of containment is one which is not backed by a second seal or barrier to prevent contamination in event of rupture of the primary seal or barrier).

## SECTION D PACKAGING AND MARKING

### D11 PRESERVATION, PACKAGING, PACKING AND MARKING (SEP 2001)

Preservation, packaging, packing, and marking shall be in accordance with ASTM D 3951-98, "Standard Practice for Commercial Packaging". Additionally, the Contractor shall mark all packages with the following, as appropriate:

CONTRACT NUMBER: <i>(from SF 1449, Block 2)</i>		
REQUISITION NUMBER: <i>(from SF 1449, Block 1)</i>		
MARK FOR: <u>Derek Catabia</u>	<u>3421</u>	<u>401-832-3528</u>
Name	Code	Telephone No.

### D20 DELIVERY OF DATA (SEP 2001)

- (a) Data furnished hereunder shall be adequately packaged to assure safe delivery at destination.
- (b) Transmittal of classified information by mail shall be in accordance with the National Industrial Security Program Operating Manual (NISPOM) for Safeguarding Classified Information (DOD 5220.22-M).
- (c) All copies of CDRL items under this contract, regardless of distribution, shall be marked on the report cover with the following information:

Naval Undersea Warfare Center Division, Newport  
Contract Number and Exhibit Line Item Number (ELIN)  
Report Title  
Date of Report  
Contractor Name (division which generated the report)

### D24 PROHIBITED PACKING MATERIALS

The use of asbestos, excelsior, newspaper or shredded paper (all types including waxed paper, computer paper and similar hygroscopic or non-neutral material) is prohibited. In addition, loose fill polystyrene is prohibited for shipboard use.

## SECTION E INSPECTION AND ACCEPTANCE

The following contract clauses are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.246-2	INSPECTION OF SUPPLIES - FIXED PRICE	(AUG 1996)
52.246-11	HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT fill-in: <u>ISO 9001</u>	(FEB 1999)

### E10 INSPECTION AND ACCEPTANCE AT DESTINATION - (HARDWARE)

(a) Inspection and acceptance of the furnished supplies shall be made at destination by the receiving activity designated in clause F18.

(b) The receiving activity shall execute acceptance certificate on **either** the Material Inspection and Receiving Report (MIRR), DD Form 250 per FAR 52.246-2, **or on the bottom of page 1 of this contract.**

## SECTION F DELIVERIES OR PERFORMANCE

The following contract clauses are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.211-16	VARIATION IN QUANTITY para.(b) fill-ins: variation shall be limited to: <u>zero</u> Percent increase <u>zero</u> Percent decrease shall apply to: <u>the total contract quantity.</u>	(APR 1984)
52.242-15	STOP-WORK ORDER	(AUG 1989)
52.242-17	GOVERNMENT DELAY OF WORK	(APR 1984)
52.247-34	F.O.B. DESTINATION	(NOV 1991)

### F11 TIME OF DELIVERY

(a) The Government requires delivery to be made according to the following schedule:

REQUIRED DELIVERY SCHEDULE

ITEM NUMBER	QUANTITY	WITHIN DAYS AFTER DATE OF CONTRACT
0001	1	45
0002	1	45
0003	5	105 (15 weeks)
0004	6	105 (15 weeks)
0006	6	105 (15 weeks) after exercise of option

The Government will evaluate equally, as regards time of delivery, offers that propose delivery of each quantity within the applicable delivery period specified above. **Offers that propose delivery that will not clearly fall within the applicable required delivery period specified above, may be considered unacceptable. If an offeror proposes a later delivery schedule that is acceptable to the Government, the Government will offer the later delivery schedule to all offerors in the competitive range as defined by FAR Part 15.** The Government reserves the right to award under either the required delivery schedule or the proposed delivery schedule, when an offeror offers an earlier delivery schedule than required above. If the offeror proposes no other delivery schedule, the required delivery schedule above will apply.

OFFEROR'S PROPOSED DELIVERY SCHEDULE

ITEM NUMBER	QUANTITY	WITHIN DAYS AFTER DATE OF CONTRACT

(b) Attention is directed to the Contract Award provision of the solicitation that provides that a written award or acceptance of offer mailed, or otherwise furnished to the successful offeror, results in a binding contract. The Government will mail or otherwise furnish to the offeror an award or notice of award not later than the day award is dated. Therefore, the offeror should compute the time available for performance beginning with the actual date of award, rather than the date the written notice of award is received from the Contracting Officer through the ordinary mails.

**F18 DELIVERY AT DESTINATION (AUG 1999)**

The articles to be furnished hereunder shall be delivered in accordance with the clause entitled, F.O.B. Destination (FAR 52.247-34), to the following address (see Block 15, page 1 of the SF 1449):

Supply Officer  
Naval Undersea Warfare Center, Division Newport  
Naval Station Newport, Bldg. 47  
47 Chandler Street  
Newport, RI 02841-1708

**F22 DELIVERY OF DATA (JUL 2001)**

The contractor shall deliver data items in accordance with the directions set forth on the DD Form 1423, Contract Data Requirements List (CDRL), which is an exhibit to this contract. Any change in the delivery of data must be made by a formal contract modification.

**SECTION G CONTRACT ADMINISTRATION DATA**

**G15 NOTE TO PAYMENT OFFICE - ADDRESS OF PAYEE**

The Paying Office will mail payments to:

\*

\_\_\_\_\_  
\_\_\_\_\_

\* Offerors should complete the above if they wish payments to be sent to an address other than that shown on the contract face. Invoices should also specifically inform the paying office of this address.

**G41 LOCAL AND SPONSOR ACRNS**

The following information relates to accounting data cited herein:

<u>RCP NUMBER</u>	SPONSOR <u>ACRN</u>	NUWCDIVNPT <u>ACRN</u>	NUWCDIVNPT <u>"I" JOB ORDER</u>
	AA	A1	

## SECTION H SPECIAL CONTRACT REQUIREMENTS – INTENTIONALLY LEFT BLANK

## SECTION I CONTRACT CLAUSES

The following contract clauses are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER	(AUG 2000)
252.204-7000	DISCLOSURE OF INFORMATION	(DEC 1991)
252.204-7002	PAYMENT FOR SUBLINE ITEMS NOT SEPARATELY PRICED	(DEC 1991)
252.204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT	(APR 1992)
252.204-7004	REQUIRED CENTRAL CONTRACTOR REGISTRATION	(MAR 2000)
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	(JUL 1995)
52.211-5	MATERIAL REQUIREMENTS	(AUG 2000)
52.211-15	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS	(SEP 1990)
52.217-7	OPTION FOR INCREASED QUANTITY - SEPARATELY PRICED LINE ITEM fill-in: within <u>See Section C</u> .	(MAR 1989)
52.219-6	NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE	(JUN 2003)
52.222-19	CHILD LABOR - COOPERATION WITH AUTHORITIES AND REMEDIES	(DEC 2001)
52.222-20	WALSH-HEALEY PUBLIC CONTRACTS ACT	(DEC 1996)
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	(FEB 1999)
52.222-26	EQUAL OPPORTUNITY	(FEB 1999)
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	(DEC 2001)
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	(JUN 1998)
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	(dec 2001)
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (DEV)	(JUL 2003)
252.227-7013	RIGHTS IN TECHNICAL DATA -- NONCOMMERCIAL ITEMS	(NOV 1995)
252.227-7016	RIGHTS IN BID OR PROPOSAL INFORMATION	(JUN 1995)
252.227-7030	TECHNICAL DATA - WITHHOLDING OF PAYMENT	(MAR 2000)
252.227-7036	DECLARATION OF TECHNICAL DATA CONFORMITY	(JAN 1997)
252.227-7037	VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA	(SEP 1999)
52.232-1	PAYMENTS	(APR 1984)
52.232-8	DISCOUNTS FOR PROMPT PAYMENT	(FEB 2002)
52.232-11	EXTRAS	(APR 1984)
52.232-17	INTEREST	(JUN 1996)
52.232-23	ASSIGNMENT OF CLAIMS - ALT I (APR 1984)	(JAN 1986)
52.232-25	PROMPT PAYMENT	(FEB 2002)
52.232-33	PAYMENT BY ELECTRONIC FUNDS TRANSFER – CENTRAL CONTRACTOR REGISTRATION	(MAY 1999)
52.232-36	PAYMENT BY THIRD PARTY	(MAY 1999)
252.232-7003	ELECTRONIC SUBMISSION OF PAYMENT REQUESTS	(MAR 2003)
52.233-1	DISPUTES	(JUL 2002)
52.233-3	PROTEST AFTER AWARD	(AUG 1996)
252.242-7000	POSTAWARD CONFERENCE	(DEC 1991)
52.243-1	CHANGES - FIXED PRICE	(AUG 1987)
252.243-7001	PRICING OF CONTRACT MODIFICATIONS	(DEC 1991)
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS	(APR 2003)
252.244-7000	SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS	(MAR 2000)
252.247-7023	TRANSPORTATION OF SUPPLIES BY SEA	(MAY 2002)

52.253-1

COMPUTER GENERATED FORMS

(JAN 1991)

**I-2 DIRECT ALL PAYMENT INQUIRIES AS FOLLOWS:**

1. If your company's name begins with "A" through "I", contact Nancy Freeman at 401-832-5953.
2. If your company's name begins with "J" through "Z", contact Martha Heitzenrater at 401-832-5957.
3. The FAX number for Receipt Control is 401-832-3075

**I52-2 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)**

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es): <http://www.arnet.gov/far/>

**SECTION J LIST OF ATTACHMENTS**

**J10 LIST OF ATTACHMENTS**

<u>EXHIBIT</u>	<u>TITLE</u>	<u>PAGES</u>
"A"	DD Form 1423, Contract Data Requirements List w/Addendum	2

ATTACHMENT

1	Statement of Work	1
2	Specification PS-RAD-002	4
3	Appendix A, Acceptance Test Procedures	2
4	Drawing No. SK-004	2

**SECTION K REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS  
OF OFFERORS OR RESPONDENTS**

The following solicitation provisions are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
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**K04-3 TAXPAYER IDENTIFICATION (FAR 52.204-3) (OCT 1998)**

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

☐ TIN: \_\_\_\_\_

☐ TIN has been applied for.

☐ TIN is not required because:

☐ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

☐ Offeror is an agency or instrumentality of a foreign government;

☐ Offeror is an agency or instrumentality of the Federal Government;

(e) Type of organization.

☐ Sole proprietorship;

☐ Partnership;

☐ Corporate entity (not tax-exempt);

☐ Corporate entity (tax-exempt);

☐ Government entity (Federal, State, or local);

☐ Foreign government;

☐ International organization per 26 CFR 1.6049-4;

☐ Other \_\_\_\_\_.

(f) Common Parent.

☐ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

☐ Name and TIN of common parent:



Name: \_\_\_\_\_

TIN: \_\_\_\_\_

**K11-7005 SUBSTITUTIONS FOR MILITARY OR FEDERAL SPECIFICATIONS AND STANDARDS (DFARS 252.211-7005) (FEB 2003)**

(a) Definition. "SPI process," as used in this clause, means a management or manufacturing process that has been accepted previously by the Department of Defense under the Single Process Initiative (SPI) for use in lieu of a specific military or Federal specification or standard at specific facilities. Under SPI, these processes are reviewed and accepted by a Management Council, which includes representatives of the Contractor, the Defense Contract Management Agency, the Defense Contract Audit Agency, and the military departments.

(b) Offerors are encouraged to propose SPI processes in lieu of military or Federal specifications and standards cited in the solicitation. A listing of SPI processes accepted at specific facilities is available via the Internet in Excel format at <http://www.dema.mil/onebook/7.0/7.2./7.2.6/reports/modified.xls>.

(c) An offeror proposing to use an SPI process in lieu of military or Federal specifications or standards cited in the solicitation shall -

- (1) Identify the specific military or Federal specification or standard for which the SPI process has been accepted;
- (2) Identify each facility at which the offeror proposes to use the specific SPI process in lieu of military or Federal specifications or standards cited in the solicitation;
- (3) Identify the contract line items, subline items, components, or elements affected by the SPI process; and
- (4) If the proposed SPI process has been accepted at the facility at which it is proposed for use, but is not yet listed at the Internet site specified in paragraph (b) of this clause, submit documentation of Department of Defense acceptance of the SPI process.

(d) Absent a determination that an SPI process is not acceptable for this procurement, the Contractor shall use the following SPI processes in lieu of military or Federal specifications or standards:

*(Offeror insert information for each SPI process)*

SPI Process: \_\_\_\_\_

Facility: \_\_\_\_\_

Military or Federal  
Specification or Standard: \_\_\_\_\_

Affected Contract Line Item Number,  
Subline Item Number, Component,  
or Element: \_\_\_\_\_

(e) If a prospective offeror wishes to obtain, prior to the time specified for receipt of offers, verification that an SPI process is an acceptable replacement for military or Federal specifications or standards required by the solicitation, the prospective offeror -

- (1) May submit the information required by paragraph (d) of this clause to the Contracting Officer prior to submission of an offer; but
- (2) Must submit the information to the Contracting Officer at least 10 working days prior to the date specified for receipt of offers.

**K15-6 PLACE OF PERFORMANCE (FAR 52.215-6) (OCT 1997)**

(a) The offeror or respondent, in the performance of any contract resulting from this solicitation, ☐ intends, ☐ does not intend [check applicable box] to use one or more plants or facilities at a different address from the address of the offeror or respondent as indicated in this proposal or response to request for information.

(b) If the offeror or respondent checks "intends" in paragraph (a) of this provision, it shall insert in the following spaces the required information:

Place of Performance  
(Street Address, City,  
County, State, Zip Code)

Name and Address of Owner and  
Operator of the Plant or Facility  
if other than offeror or respondent

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**K19-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (FAR 52.219-1) (APR 2002) – ALT I (APR 2002)**

(a) (1) The North American Industry Classification System (NAICS) code for this acquisition is set forth in block 8 of the SF 1447, Page 1 of this solicitation.

(2) The small business size standard is set forth in block 8 of the SF 1447, Page 1 of this solicitation.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

**(b) Representations.**

(1) The offeror represents as part of its offer that it ☐ is, ☐ is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ☐ is, ☐ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a service-disabled veteran-owned small business concern.

(6) (Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, as part of its offer, that –

(i) It ☐ is, ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR Part 126; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: \_\_\_\_\_.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) [Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.] The offeror shall check the category in which its ownership falls:

☐ Black American.

☐ Hispanic American.

- ☐ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).
- ☐ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).
- ☐ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).
- ☐ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

*“Service-disabled veteran-owned small business concern” -*

(1) Means a small business concern -

- (i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and
- (ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

*“Small business concern,”* means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

*“Veteran-owned small business concern”* means a small business concern -

- (1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
- (2) The management and daily business operations of which are controlled by one or more veterans.

*“Women-owned small business concern,”* means a small business concern--

- (1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm’s status as a small, HUBZone small, small disadvantaged or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to sections 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall --

- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

**K22-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FAR 52.222-22) (FEB 1999)**

The offeror represents that-

- (a) It ☐ has, ☐ has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;
- (b) It ☐ has, ☐ has not, filed all required compliance reports, and
- (c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

**K22-25 AFFIRMATIVE ACTION COMPLIANCE (FAR 52.222-25) (APR 1984)**

The offeror represents that -

- (a) It ☐ has developed and has on file, ☐ has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or
- (b) It ☐ has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

**K27-7017 IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (DFARS 252.227-7017) (JUN 1995)**

- (a) The terms used in this provision are defined in following clause or clauses contained in this solicitation--

(1) If a successful offeror will be required to deliver technical data, the Rights in Technical Data--Noncommercial Items clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.

(2) If a successful offeror will not be required to deliver technical data, the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.

- (b) The identification and assertion requirements in this provision apply only to technical data, including computer software documents, or computer software to be delivered with other than unlimited rights. For contracts to be awarded under the Small Business Innovative Research Program, the notification requirements do not apply to technical data or computer software that will be generated under the resulting contract. Notification and identification is not required for restrictions based solely on copyright.

- (c) Offers submitted in response to this solicitation shall identify, to the extent known at the time an offer is submitted to the Government, the technical data or computer software that the Offeror, its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure.

- (d) The Offeror's assertions, including the assertions of its subcontractors or suppliers or potential subcontractors or suppliers shall be submitted as an attachment to its offer in the following format, dated and signed by an official authorized to contractually obligate the Offeror:

Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data or Computer Software.

The Offeror asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

---

Technical Data or Computer Software to be Furnished With Restrictions *	Basis for Assertion **	Asserted Rights Category ***	Name of Person Asserting Restrictions ****
(LIST)*****	(LIST)	(LIST)	(LIST)

\* For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such items, component, or process. For computer software or computer software documentation identify the software or documentation.

\*\* Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions. For technical data, other than computer software documentation, development refers to development of the item, component, or process to which the data pertain. The Government's rights in computer software documentation generally may not be restricted. For computer software, development refers to the software. Indicate whether development was accomplished exclusively or partially at private expense. If development was not accomplished at private expense, or for computer software documentation, enter the specific basis for asserting restrictions.

\*\*\* Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited, restricted, or government purpose rights under this or a prior contract, or specially negotiated licenses).

\*\*\*\* Corporation, individual, or other person, as appropriate.

\*\*\*\*\* Enter "none" when all data or software will be submitted without restrictions.

Date \_\_\_\_\_

Printed Name and Title \_\_\_\_\_

Signature \_\_\_\_\_

(End of identification and assertion)

(e) An offeror's failure to submit, complete, or sign the notification and identification required by paragraph (d) of this provision with its offer may render the offer ineligible for award.

(f) If the Offeror is awarded a contract, the assertions identified in paragraph (d) of this provision shall be listed in an attachment to that contract. Upon request by the Contracting Officer, the Offeror shall provide sufficient information to enable the Contracting Officer to evaluate any listed assertion.

## SECTION L INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR QUOTERS

The following solicitation provisions are hereby incorporated by reference:

Number	Title	Date
52.204-6	DATA UNIVERSAL NUMBERING SYSTEM (DUNS)	(JUN 1999)
252.204-7001	COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING	(AUG 1999)
52.211-14	NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE check one: _____ DX or <u>  X  </u> DO rated order	(SEP 1990)
252.227-7028	Technical Data or Computer Software Previously Delivered to the Government	(Jun 1995)

**L2 OTHER INSTRUCTIONS TO OFFERORS (NOV 1999)**

- (a) It is the offeror's responsibility to ensure delivery of the proposal to the Bid Depository by the time and date specified on the solicitation form. FAR Provision 52.215-1 provides regulatory guidance concerning the timeliness of bids or proposals. Offerors should read this provision before determining which method of transmittal is appropriate.
- (b) Clearly indicate the solicitation number and the closing time and date on the outside of the package containing the offer.
- (c) Offerors are cautioned that certain prior approval procedures (e.g., visitor's pass, badging, etc.) must be followed to gain access to the Naval Station Newport. These procedures may cause time delays and are considered part of the responsibility of the offeror.

**L4 FACSIMILE PROPOSALS AND BIDS NOT AUTHORIZED**

Facsimile proposals (bids) are not authorized for this acquisition. "Facsimile proposal (bid)," as used in this solicitation, means a proposal (bid), modification of a proposal (bid), or withdrawal of a proposal (bid) that is transmitted to and received by the Government via electronic equipment that communicates and reproduces both printed and handwritten material.

**L9 AVAILABILITY OF REQUIRED FORMS AND PUBLICATIONS**

- (a) Offerors will need a variety of required Government forms and publications in submitting offers and performing the contract. These are available as specified below; payment may be necessary.
- (1) Forms listed in FAR Section 53 (Standard Forms and Optional Forms) are available per FAR 53.107(b) from the Superintendent of Documents, GPO, Washington, DC 20402. This is the best source of all Federal, non-DoD publications and documents.
  - (2) Forms listed in DFARS Section 53 (DD Forms) are available from the same activity as specifications (See Section L, FAR 52.211-2). This is the best source of DoD publications and documents.
  - (3) Forms may also be available through the offeror's cognizant Administrative Contracting Officer.
  - (4) In addition to Government sources, items may be available from public libraries and commercial sources.
- (b) All NUWC Division, Newport specific forms are attached; see Section J.

**L34 TECHNICAL PROPOSAL**

- (a) See Provision M12. The offeror shall submit information regarding its quality assurance program unless the requirements of line items 0001, 0002, and 0003 may be waived.
- (b) See Provision M20. The offeror shall fill in the information, if applicable.

**L11-9000 NOTICE TO OFFERORS -- USE OF OZONE DEPLETING SUBSTANCES  
(NAPS 5252.211-9000) (AUG 1993)**

- (a) In accordance with section 326 of Pub L. 102-484, the Department of Defense is prohibited from awarding any contract which includes a DoD-directed specification or standard that requires the use of a Class I ozone depleting substance (ODS) or that can be met only through the use of such a substance unless such use has been approved by a senior acquisition official (SAO). The SAO approval is based on a technical certification that no suitable substitute for the ODS is currently available.
- (b) To comply with this statute, the Navy has screened the specifications and standards associated with this solicitation. To the extent that ODS requirements were revealed by this review they are identified below:

**Class I ODS Identified**

**Specification/Standard**

(c) If offerors possess knowledge about any other Class I ODS required directly or indirectly by the specification or standards, the Navy would appreciate such information in your response to this solicitation. Offerors are under no obligation to comply with this request and no compensation can be provided for doing so.

**L15-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (FAR 52.215-1)  
(MAY 2001)**

(a) *Definitions.* As used in this provision--

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

“In writing”, “writing” or “written” means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time,” if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) *Amendments to solicitations.* If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) *Submission, modification, revision, and withdrawal of proposals.*

**(1) Proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages**

(i) addressed to the office specified in the solicitation, and

(ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

**(2) The first page of the proposal must show--**

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

**(3) Submission, modification, revision, and withdrawal of proposals.**

(i) Offerors are responsible for submitting proposals, and any modifications or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is “late” and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and –

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) *Offer expiration date.* Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) *Restriction on disclosure and use of data.* Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend:

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part-- for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend:

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) *Contract award.*

(1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be



conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

- (i) The overall evaluated cost or price and technical rating of the successful offeror;
- (ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;
- (iii) A summary of the rationale for award; and
- (iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

#### **L16-1 TYPE OF CONTRACT (FAR 52.216-1) (APR 1984)**

The Government contemplates award of a Firm-Fixed-Price type of contract resulting from this solicitation.

#### **L52-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FAR 52.252-1) (FEB 1998)**

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es): <http://www.arnet.gov/far/>

#### **SECTION M EVALUATION FACTORS FOR AWARD**

The following solicitation provisions are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.217-5	EVALUATION OF OPTIONS	(JUL 1990)

#### **M10 SINGLE AWARD**

Due to the interrelationship of supplies and/or services to be provided hereunder, the Government intends to make a single award. The Government reserves the right to make a single award to the offeror whose offer is considered to be in the best interest of the Government, price and other factors considered.

#### **M12 AWARD CRITERIA**

Award will be made to that responsible offeror proposing the lowest price for supplies or equipment meeting the requirements of the solicitation. The contractor shall have a quality assurance program consistent with the requirements of ISO 9001.

**M20 EVALUATION - CONTRACTOR TESTING OF "FIRST ARTICLE"**

(a) If supplies identical or substantially identical to those called for herein have been previously furnished by the offeror and accepted by the Government, the requirement for first article approval may be waived by the Contracting Officer. The offeror shall indicate below the contracts under which supplies identical or substantially identical to those called for herein have been previously accepted by the Government:

Contract Numbers: \_\_\_\_\_

(b) All offerors should submit an offer on the basis that first article requirements will not be waived. Offerors who believe, on the basis of paragraph (a) above, that they may qualify for waiver of first article may also submit an offer on the basis that the first article requirements will be waived.

(c) Subject to considerations of responsiveness of offers and responsibility of offerors, and subject to other evaluation factors provided for in this solicitation, offers will be evaluated on the basis of lowest cost to the Government whether or not such lowest cost involves waiver of first article requirements.

(d) Any award resulting from this solicitation will state whether the first article requirements are or are not waived. In the event of a waiver, all clauses and references relating to the first article will not apply.



ADDENDUM 1 TO EXHIBIT A

ADDITIONAL CDRL INFORMATION

**BLOCK 14 ADDRESSEE LIST**

DD FORM 1423 (CDRL)

BLOCK 14 ENTRY

COMPLETE ADDRESS

NAVUNSEAWARCENDIVNPT 3421

Commanding Officer  
Naval Undersea Warfare Center  
Division, Newport  
Newport, RI 02841-1708  
Attn: C. Cooney, Code 3421

NAVUNSEAWARCENDIVNPT 3495

Commanding Officer  
Naval Undersea Warfare Center  
Division, Newport  
Newport, RI 02841-1708  
Attn: D Swanick, Code 3495

NAVUNSEAWARCENDIVNPT 3421

Commanding Officer  
Naval Undersea Warfare Center  
Division, Newport  
Newport, RI 02841-1708  
Attn: D. Catabia, Code 3421

DCM

To be determined at contract award

**BLOCK 16 ADDENDUM**

BLOCK 9: The following information is specifically included in amplification of the Block 9 Distribution Statement selected:

Distribution Statement paragraphs are in addition to CLASSIFICATION markings of the data.

The Contractor shall use Distribution Statement D.

**Distribution Statement D:** Distribution authorized to the DoD and DoD contractors only; Critical Technology\*; \_\_\_\_\_. Other requests shall be referred to NAVUNSEAWARCENDIVNPT Code 3495, or higher DoD authority.  
(date of DD 1423)

The following "EXPORT CONTROL WARNING NOTICE" must be used in conjunction with DISTRIBUTION STATEMENTS identified in all CDRL Items.

WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C. Sec. 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App 2401 et seq. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

DESTRUCTION NOTICE - For unclassified, limited distribution documents, destroy by any method that will prevent disclosure of contents or reconstruction of the document.

BLOCKS 6 AND 14: "NUWC DIVNPT" used in these spaces shall be interpreted as "NAVUNSEAWARCENDIVNPT".

## **Statement of Work**

## **Statement of Work**

### **1.0 Requirements**

#### **1.1 Flat Panels.**

**NOTE:** The flat panel fabrication and test requirements can be waived if previous data exists and is deemed acceptable by the government. The contractor shall present evidence with its proposal.

The contractor shall fabricate and test one flat composite panel in accordance with specification PS-RAD-002. The contractor shall be responsible for the machining and testing of the flat panel in accordance with Appendix A of PS-RAD-002, Sections 1.0 through 1.7. The Government will perform electrical measurements (transmission loss).

Fabrication of one flat panel and the first radome shall occur simultaneously. The flat panel shall be successfully tested in accordance with specification PS-RAD-002 before fabrication of the second radome begins.

**1.2 Radome.** The contractor shall fabricate six composite radomes in accordance with specification PS-RAD-002. The contractor shall be responsible for assuring the physical characteristics of the radome are in compliance with the specification. The Government will perform hydrostatic pressure and electrical tests.

#### **1.3 Test Report**

The contractor shall prepare a test report to document the results of all required tests. (CDRL A001)

### **2.0 Delivery Schedule**

**2.1 Radome Fabrication Lay-up Procedures.** Radome fabrication lay-up procedures shall be provided to the Government for review within 15 days of contract award.

**2.2 Flat Panels.** If the flat panel requirement is not waived, the fabrication of one flat panel shall be completed and delivered within 45 days after contract award.

**2.3 Radomes.** The radomes shall be completed and delivered 15 weeks after the contract is awarded. If the flat panel requirement is not waived, the fabrication of the first radome shall be completed and delivered within 45 days after contract award.

### **3.0 Government Representative**

The technical point of contact for this contract is Mr. Derek Catabia, Code 3421, telephone (401) 832-3528.

N66604-4021-06N3  
N66604-04-R-2074  
Attachment #1

**Req. N66604-3357-07N3  
N66604-04-R-2074  
Attachment #2**

**Specification PS-RAD-002**

**FIBER REINFORCED COMPOSITE RADOME SPECIFICATION  
FOR UNIAXIAL OR BALANCED PLY ARRANGEMENTS**

## **1.0 Scope**

This specification establishes the design, fabrication, performance and test requirements for the fabrication of fiber reinforced composite radomes for submarine applications.

## **2.0 Physical Characteristics**

**2.1 Material.** The radome shall be fabricated from BTCY-1A/AQ3 Quartz Fiber Reinforced Cyanate-Ester pre-preg material. The manufacture of this material is Bryte Technologies. Deviation from this material shall be submitted to the Government for approval.

**2.2 Physical Characteristics, Flat Panels.** A Flat test panel, 12" x 12" x 0.30" panel shall be fabricated for verification of electrical and mechanical properties. The flat panel shall be fabricated using the same manufacturing processes as will be applied during the manufacture of the radome.

**2.3 Physical Characteristic, Radome.** The radome shall be fabricated in accordance with Drawing SK004: Radome, Long (with the exception of note 12, contact government POC for S/N convention). Detailed lay-up procedures shall be provided to the Government for review prior to radome fabrication.

**2.3.1 Sealing.** The radome shall be sealed to preclude water entry or absorption due to hydrostatic pressure or other environmental causes. The surfaces that are to be painted and sealed are referenced in Drawing SK-004.

**2.3.2 Surface Finish.** The radome exterior surface shall be in accordance with Drawing SK-004 to minimize drying time, water adhesion, and marine micro organism growth.

## **3.0 Performance Characteristics**

**3.1 Performance Characteristics, Flat Panels.** The mechanical properties of the radome material shall meet the requirements specified in Table I when tested in accordance with Appendix A. Table I specifies the measured magnitudes required for compliance and the number and type of specimen conditioning (wet or dry) to be performed prior to each test. See section 5.0 for responsibility for inspection and compliance.



**Table I: Constituent Material Performance Requirements**

Property (Appendix A Test Paragraph)	Requirement	Specimen Conditioning (see para. 2.1)	Specimen Matl. (# specimens) †
<b>Elastic Constants</b>			
Longit. Comp. Modulus (1.1)	3.3 Msi min	wet	flat (3)
Longit. Tens. Modulus (1.2)	3.4 Msi min	wet	flat (3)
Longit. Flexural Modulus (1.3)	3.0 Msi min	wet	flat (3)
<b>Strength Properties</b>			
Longit. Compressive Strength (1.1)	65 ksi min	wet	flat (3)
Longit. Tensile Strength (1.2)	85 ksi min	wet	flat (3)
Longit. Flexural Strength (1.3)	85 ksi min	wet	flat (3)
In-Plane Shear Strength (1.4)	6 ksi min	wet	flat (3)
<b>Other Properties</b>			
Barcol Hardness (1.5)	67 avg.	wet	flat (3)
Void Content (1.6)	.2% max.	dry	flat (3)
Water Absorption (1.7)	.5% max.	na	flat (3)
Dielectric Constant (1.8)	3.3 max. up to 40 GHz	wet	12"x12"x0.30"
Transmission Loss (1.9)	2.5 dB max. up to 40 GHz	wet	12"x12"x0.30"

† The term "flat" refer to specimens made from material that is obtained from flat plates manufactured in accordance with paragraph 3.1 of this specification.

**3.2 Performance Characteristics, Radome.** The radome shall perform in accordance with the requirements specified in Table II. Table II identifies the measured magnitudes required for compliance and the type of specimen conditioning to be performed prior to each test. Each radome delivered to the Government shall be subject to inspection in accordance with Table II and the test procedures provided in Appendix A. See section 5.0 for responsibility for inspection and compliance.

**Table II: Radome Performance Requirements**

Property (Appendix A Test Paragraph)	Requirement	Specimen Conditioning (see para. 2.1)
Physical Characteristics (2.1)	per dwg.	na
Hydrostatic Pressure Cycles (0 to 1050 +25/-0 psig) (2.2)	10 Cycles	na
Hydrostatic Pressure Continuous (1050 +25/-0 psig) (2.2)	8 hours	na
Barcol Hardness (Excess Radome Material) (1.5)	67 avg.	wet
Water Absorption (Excess radome material) (1.7)	0.5% max.	na
Transmission Loss (2.3)	2.5 dB max. up to 40 GHz	wet
Transmission Loss- Axial Tracking (2.3)	+/- 0.4 dB	wet
Transmission Loss- Circumferential Tracking (2.3)	+/- 0.25 dB	wet

#### 4.0 Workmanship

The contractor shall examine the radome for workmanship during the fabrication and assembly process for conformance to MIL-HDBK-454, Requirement 9.

## **5.0 Quality Assurance Provisions**

**5.1 General.** The contractor shall have in place a quality assurance program to assure, through an integrated and systematic approach, that the radome will achieve a high level of quality consistent with the requirements of ISO 9001 or equivalent as approved by the Government. The contractor's QA organization shall be independent and participate in the planning of all aspects of radome fabrication. See also FAR 52.246-2 incorporated by reference in this order.

**5.1.1 Responsibility for Acceptance Testing.** Testing to verify compliance with the requirements specified in Table I shall be performed by the contractor with the exception of electrical tests. The Government will perform electrical tests on the 12" x 12" x 0.30" flat panel. The Government will perform test to verify compliance with Table 2. The Government reserves the right to perform any of the inspections set forth in this specification, where such inspection is deemed necessary to assure that the supplies and services conform to the prescribed requirements.

**5.1.2 Responsibility for Compliance.** Regardless of performing agency, the contractor is responsible for meeting all of the requirements as specified herein. The inspections set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring a quality product.

**5.1.3 Government Verification.** All quality assurance operations performed by the contractor shall be subject to Government verification at any time. Verification shall consist of, but is not limited to, a) surveillance of the operations to determine the practices, methods, and procedures of the written quality program are being properly applied, b) product inspection to measure quality of the product to be offered for acceptance, and c) inspection of delivered products to assure compliance with all inspection requirements of this specification. Failure of the contractor to promptly correct deficiencies discovered by him or of which he is notified shall be cause for suspension of acceptance until corrective action has been taken or until conformance of the product to prescribed criteria has been demonstrated.

## **5.2 Test and Examinations**

The tests specified in Tables I and II shall be performed in accordance with the procedures provided in Appendix A.

**5.3 Quality Conformance Inspections.** Quality conformance inspections shall be as specified in 5.3.1 and 5.3.2

**5.3.1 In-process Inspections.** In-process inspections are those that are beyond the acceptance testing specified in Tables I and II and shall occur during the fabrication of the radome. The in-process inspections shall be defined and performed by the contractor to ensure compliance with the quality assurance provisions of this specification and the contractor's in-house quality assurance program. The procedures and results shall be made available for review by the Government at the time of delivery of any production material.

**5.3.2 Production Inspection.** Production inspection shall be conducted on each radome offered for delivery. Production inspection shall comprise examinations and tests to verify the workmanship and reveal omissions and errors in the production process. Production inspection shall include the examinations and tests specified in Table II.

## **6.0 Preparation for Delivery**

Unless otherwise specified, preparation for delivery shall be in accordance with best commercial practices.

## **Appendix A**

### **Acceptance Test Procedures**

#### **1.0 Test Specimen Conditioning**

Test specimens shall be conditioned prior to testing. “Dry” conditioning shall be accomplished by placing the specimen in an oven for  $32 \pm 8$  hours at  $122 \pm 6^\circ\text{F}$ , storing the sample in a desiccator, and allowing the specimen to cool to the required test temperature. “Wet” conditioning shall be hot immersion in water with a duration and temperature of  $96 \pm 3$  hours and  $140 \pm 3^\circ\text{F}$  respectively, storing the sample in a sealed bag, and allowing the specimen to cool to the required test temperature.

#### **1.1 Compressive Strength and Modulus**

The magnitudes of the ultimate longitudinal compressive strength ( $S_{cLL}$ ) and compressive modulus of elasticity ( $E_{cLL}$ ) of the laminate shall be measured and evaluated for compliance. When applicable, testing shall be performed on the warp axis. Testing shall be performed in accordance with ASTM D3410.

#### **1.2 Tensile Strength and Modulus**

The magnitudes of the ultimate longitudinal tensile strength ( $S_{tLL}$ ) and tensile modulus of elasticity ( $E_{tLL}$ ) of the laminate shall be measured and evaluated for compliance. When applicable, testing shall be performed on the warp axis. Testing shall be performed in accordance with ASTM D3039-76.

#### **1.3 Flexural Strength and Modulus**

The magnitudes of the flexural strength and flexural modulus of the laminate shall be measured and evaluated for compliance. Testing shall be performed in accordance with ASTM D790-92.

#### **1.4 In-Plane Shear Strength**

The magnitude of the apparent transverse shear strength of the laminate shall be measured and evaluated for compliance. Testing shall be performed in accordance with ASTM D3846-79.

#### **1.5 Barcol Hardness**

The magnitude of the hardness of the laminate shall be measured and evaluated for compliance. Testing shall be performed in accordance with ASTM D2583-92.

#### **1.6 Void Content**

The magnitude of the void content of the laminate shall be measured and evaluated for compliance. Testing shall be performed in accordance with ASTM D2734-91.

#### **1.7 Water Absorption**

The magnitude of the water absorption (by weight) of the laminate shall be measured and evaluated for compliance. Testing shall be performed in accordance with ASTM D570, dry-conditioning of  $32 \pm 8$  hours at  $122 \pm 6^\circ\text{F}$ , and a hot immersion in water with a duration and temperature of  $96 \pm 3$  hours and  $140 \pm 3^\circ\text{F}$ . The specimen shall be “as-machined” without sealant applied to the edges.

## 1.8 Dielectric Constant

The reflectivity of a flat test panel, defined in Table 1 of the specification, shall be measured in free space. The reflection coefficient of the material shall be measured at normal incidence over the frequency range of 2-40 GHz relative to the reflectivity of a metallic plate of the same dimensions. The measurement shall be conducted on an NRL Arch or in a compact range. The transmission line technique is also an acceptable test method.

## 1.9 Transmission Loss

The transmission loss through a flat test panel, defined in Table I of the specification, shall be measured using a free space transmission loss technique within a tunnel lined with absorber to suppress undesired leakage.

## 2.0 Radome Acceptance Tests

**2.1 Physical Inspection.** Each radome shall be subjected to physical and dimensional inspection. The inspection shall be conducted prior to and after completion of all required tests. The radome inspection shall include, surface finish, cracks, voids, delaminations, and surface imperfections.

**2.2 Hydrostatic Pressure.** Each production radome shall be subjected to an external hydrostatic pressure test installed on a dummy base. Test will be conducted as follows in the order shown:

- a. 1 hr. @ 4 +2/-0 psig
- b. 10 cycles 0 to 1050 back to 0 psig (+25/-0 psig) with a 5 minute (-0/+1 min.) hold at each step.
- c. 8 hr. hold (-0/+2 hr.) @ 1050 +25/-0 psig

Note: Ramp rates = 200 psig/min. +/- 50 psig/min.

## 2.3 Transmission Loss

To establish a baseline, the gain of a horn antenna (at bore site) will be measured. Without disturbing the antenna the radome will then be placed over the antenna. The transmission loss will be determined by taking the difference between the baseline antenna gain and the antenna gain with the radome in place. To verify circumferential tracking, the transmission loss will be measured at a minimum of 36 azimuth positions. Axial tracking will be verified by measuring transmission loss at two elevations within the radome at four azimuth positions.

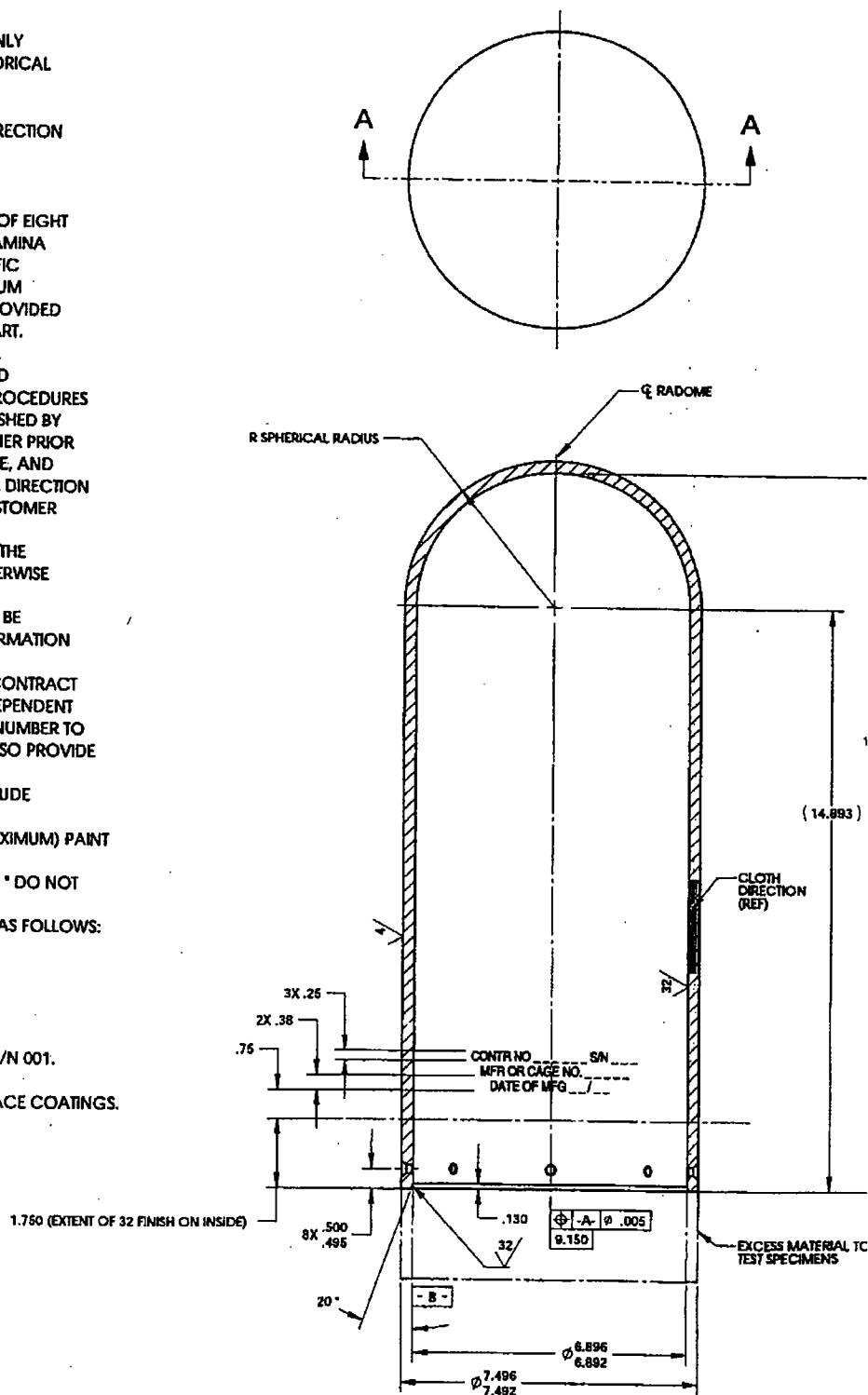
## NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH APPLICABLE STANDARDS PRESCRIBED BY MIL-T-31000 FOR DEVELOPMENTAL DESIGN DRAWINGS.
2. INTERPRET DRAWING PER MIL-STD-100.
3. MATERIAL SHALL BE QUARTZ FIBER REINFORCED CYANATE-ESTER LAMINATE FABRICATED PER MIL-P-25241 WITH FIBER ORIENTED ONLY IN THE AXIAL AND CIRCUMFERENTIAL DIRECTIONS OF THE CYLINDRICAL PART.
4. LAMINA SHALL BE CONTINUOUS IN THE AXIAL DIRECTION OF THE CYLINDRICAL PART. DISCONTINUITY OF LAMINA IN THE AXIAL DIRECTION SHALL BE PERMITTED ONLY IN THE AREA OF THE COUNTERSUNK THROUGH HOLES.
5. THE DISCONTINUITY IN THE CIRCUMFERENTIAL DIRECTION OF THE CYLINDRICAL PART SHALL BE LIMITED TO A MAXIMUM QUANTITY OF EIGHT PER LAMINA. A MINIMUM PLY OVERLAP AT THE LOCATION OF LAMINA DISCONTINUITIES SHALL BE SPECIFIED BY MANUFACTURER. SPECIFIC PROCESS CONTROL PROCEDURES FOR MAINTAINING THE MINIMUM OVERLAP SHALL BE ESTABLISHED BY THE MANUFACTURER AND PROVIDED IN WRITING TO THE CUSTOMER PRIOR TO FABRICATION OF THE PART. THERE SHALL BE NO REQUIREMENT FOR MAXIMUM OVERLAP. ALL CIRCUMFERENTIAL DISCONTINUITIES SHALL BE EVENLY STAGGERED AROUND THE CIRCUMFERENCE. SPECIFIC PROCESS CONTROL PROCEDURES FOR MAINTAINING A STAGGERED DISTRIBUTION SHALL BE ESTABLISHED BY THE MANUFACTURER AND PROVIDED IN WRITING TO THE CUSTOMER PRIOR TO FABRICATION OF THE PART. THE AS-BUILT MAXIMUM, AVERAGE, AND MINIMUM NUMBER OF DISCONTINUITIES IN THE CIRCUMFERENTIAL DIRECTION SHALL BE DOCUMENTED FOR THE PART AND SUPPLIED TO THE CUSTOMER WITH A UNIQUELY TRACEABLE NUMBER TO PART FABRICATED.
6. THE FIBER SHALL BE ASSEMBLED IN CLOTH FORM PER AMS 3864B. THE WEAVE SHALL BE IN ACCORDANCE WITH STYLE 4581 UNLESS OTHERWISE APPROVED IN WRITING BY THE CUSTOMER.
7. INDIVIDUAL LAMINA SHALL CONSIST OF A SINGLE PLY AND SHALL BE FABRICATED IN PRE-PREG FORM. REPORTING OF MATERIAL INFORMATION SHALL BE IN ACCORDANCE WITH MIL-P-9400.
8. THE MANUFACTURER SHALL PROVIDE DOCUMENTATION OF ALL CONTRACT SPECIFIED TEST RESULTS IN THE FORM OF MANUFACTURER OR INDEPENDENT TEST LABORATORY CERTIFICATION WITH A UNIQUELY TRACEABLE NUMBER TO PARTS TESTED. WHEN APPLICABLE, THE MANUFACTURER SHALL ALSO PROVIDE DOCUMENTATION IN ACCORDANCE WITH THE REQUIREMENTS.
9. AFTER ANY MACHINING, THE SURFACE MUST BE SEALED TO PRECLUDE ABSORPTION OF WATER.
10. EXTERNAL FINISH SHALL BE AN EPOXY POLYAMIDE (.002 INCH MAXIMUM) PAINT PER MIL-C-22750, COLOR GRAY NUMBER 26270 PER FED-STD-595.
11. PERMANENTLY STENCIL LABEL, IN BLACK, ON EXTERNAL SURFACE, "DO NOT PAINT", AS SHOWN.
12. PERMANENTLY STENCIL LABEL, IN BLACK, ON INTERNAL SURFACE AS FOLLOWS:

CONTR NO \_\_\_\_\_ S/N \_\_\_\_\_  
 MFR OR CAGE NO \_\_\_\_\_  
 DATE OF MFG \_\_\_\_/\_\_\_\_/\_\_\_\_

SERIAL NOS. SHALL BE THREE DIGIT NOS. AND SHALL BEGIN WITH S/N 001.

13. DIMENSIONS SHOWN ARE FINISHED DIMENSIONS AFTER ALL SURFACE COATINGS.



SECTION A-A

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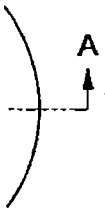
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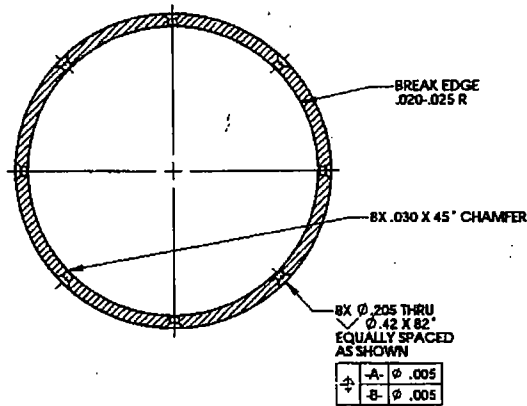
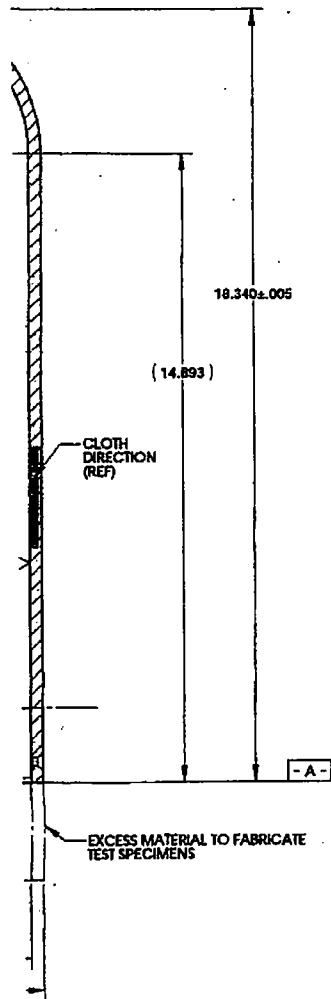
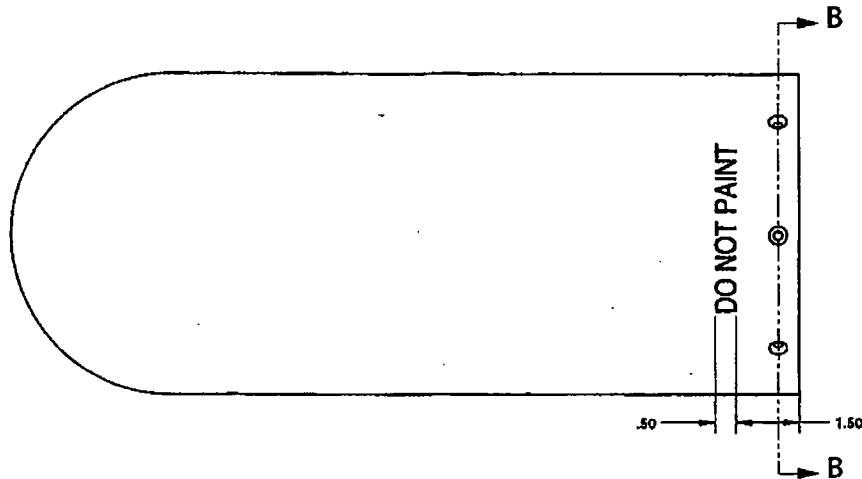
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SECTION B-B

WHEN DIMENSIONED DIMENSIONS ARE IN INCHES DIMENSIONS ARE: FRACTIONS 1/16" 3/32" 1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 7/8" 1" 1 1/8" 1 1/4" 1 1/2" 1 3/4" 2" 2 1/4" 2 1/2" 2 3/4" 3" 3 1/4" 3 1/2" 3 3/4" 4" 4 1/4" 4 1/2" 4 3/4" 5" 5 1/4" 5 1/2" 5 3/4" 6" 6 1/4" 6 1/2" 6 3/4" 7" 7 1/4" 7 1/2" 7 3/4" 8" 8 1/4" 8 1/2" 8 3/4" 9" 9 1/4" 9 1/2" 9 3/4" 10" 10 1/4" 10 1/2" 10 3/4" 11" 11 1/4" 11 1/2" 11 3/4" 12" 12 1/4" 12 1/2" 12 3/4" 13" 13 1/4" 13 1/2" 13 3/4" 14" 14 1/4" 14 1/2" 14 3/4" 15" 15 1/4" 15 1/2" 15 3/4" 16" 16 1/4" 16 1/2" 16 3/4" 17" 17 1/4" 17 1/2" 17 3/4" 18" 18 1/4" 18 1/2" 18 3/4" 19" 19 1/4" 19 1/2" 19 3/4" 20" 20 1/4" 20 1/2" 20 3/4" 21" 21 1/4" 21 1/2" 21 3/4" 22" 22 1/4" 22 1/2" 22 3/4" 23" 23 1/4" 23 1/2" 23 3/4" 24" 24 1/4" 24 1/2" 24 3/4" 25" 25 1/4" 25 1/2" 25 3/4" 26" 26 1/4" 26 1/2" 26 3/4" 27" 27 1/4" 27 1/2" 27 3/4" 28" 28 1/4" 28 1/2" 28 3/4" 29" 29 1/4" 29 1/2" 29 3/4" 30" 30 1/4" 30 1/2" 30 3/4" 31" 31 1/4" 31 1/2" 31 3/4" 32" 32 1/4" 32 1/2" 32 3/4" 33" 33 1/4" 33 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